3rd International Conference on

BIOMATERIALS, CELLULAR AND TISSUE ENGINEERING

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BIOGRAPHY

Dong-An Wang is a Professor of Biomedical Engineering in City University of Hong Kong. His research interests include biomaterials, tissue engineering and gene delivery. He has done significant research work in his research areas and published over 100 high quality journal papers including nature materials, advanced functional materials and biomaterials etc. He has been often invited as a theme Editor and Reviewer for a number of top journals. He has been conferred with various research/academic awards.

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DECELLULARIZED HYALINE CARTILAGE GRAFT (DLHCG) FOR CARTILAGE REPAIR

In this study, author has developed a continuous methodology to directly set up a scaffold-free macro-scaled three-dimensional living hyaline cartilage graft (LhCG) with the aid of a biomaterial-based interim scaffolding system. The practical performance of decellularized LhCG (dLhCG) is evaluated in the knees of large animal models with full-thickness chondral defects beyond critical sizes for six months. Hyaline cartilage based neo-tissue fulfills the desired in situ reconstruction. LhCG is also employed as an engineered biomimetic/pathological tissue platform for anti-arthritis drug evaluation *in vitro*. Arthritic disease models are created with LhCG by replicating the inflammatory environment of an arthritic joint via co-culturing LhCG with lipopolysaccharide (LPS)-activated macrophages, after which the accuracy of this model for *in vitro* drug-testing was validated using a popularly applied non-steroidal anti-inflammatory drug (NSAID). The results suggest that this new arthritic model is able to adequately mimic the native arthritic cartilage and is suitable to be used as an *in vitro* model for predicting native cartilage response to drug treatment.